Amended Claims With Mark-ups to Show Changes Made

1.   (Twice Amended)   A method of [eliminating sidelobes in] establishing a communication channel between a base station and a mobile station, comprising:

(a)   generating control signals and data signals within the communication channel, said control signals having a first sequence of L-bits and a second sequence of L-bits;

(b)   autocorrelating the first and second sequences to generate first and second autocorrelated values;

(c)   cross-correlating the first and second sequences to generate first and second cross-correlated values; and

(d)   combining the first and second autocorrelated values and the first and second cross-correlated values.

34. (Amended) A frame structure for a communication system, each frame having 15

slots and each slot having N number of pilot bits, where $2 \leq N \leq 16$, such that there are N

number of pilot bit patterns of 15 bits in the frame, wherein the improvement comprises N

number of pilot bit patterns having at least one of the following pilot bit patterns:

Slot No	1 2 3 4...........................15
Pilot bit pattern 1 =	(1 0 0 0 1 1 1 1 0 1 0 1 1 0 0)
Pilot bit pattern 2 =	(1 0 1 0 0 1 1 0 1 1 1 0 0 0 0)
Pilot bit pattern 3 =	(1 1 0 0 0 1 0 0 1 1 0 1 0 1 1)
Pilot bit pattern 4 =	(0 0 1 0 1 0 0 0 0 1 1 1 0 1 1)
Pilot bit pattern 5=	(1 1 1 0 1 0 1 1 0 0 1 0 0 0 1)
Pilot bit pattern 6 =	(1 1 0 1 1 1 0 0 0 0 1 0 1 0 0)
Pilot bit pattern 7 =	(1 0 0 1 1 0 1 0 1 1 1 1 0 0 0)
Pilot bit pattern 8=	(0 0 0 0 1 1 1 0 1 1 0 0 1 0 1)

[wherein any one of the pilot bit patterns allows at least one of channel estimation and frame

synchronization.]

35. (Amended) A frame structure for an uplink Dedicated Physical Control Channel (DPCCH) in a communication system, wherein the improvement comprises each frame of the uplink DPCCH having 15 slots and N_{pilot} number of pilot bits in each slot, where $3 \leq N_{pilot} \leq 8$ and pilot bit patterns comprise at least one of the following based on N_{pilot} number of pilot bits:

	when $N_{pilot} = 5$					when $N_{pilot} = 6$					
Bit #	0	1	2	3	4	0	1	2	3	4	5
Slot #0	1	1	1	1	0	1	1	1	1	1	0
1	0	0	1	1	0	1	0	0	1	1	0
2	0	1	1	0	1	1	0	1	1	0	1
3	0	0	1	0	0	1	0	0	1	0	0
4	1	0	1	0	1	1	1	0	1	0	1
5	1	1	1	1	0	1	1	1	1	1	0
6	1	1	1	0	0	1	1	1	1	0	0
7	1	0	1	0	0	1	1	0	1	0	0
8	0	1	1	1	0	1	0	1	1	1	0
9	1	1	1	1	1	1	1	1	1	1	1
10	0	1	1	0	1	1	0	1	1	0	1
11	1	0	1	1	1	1	1	0	1	1	1
12	1	0	1	0	0	1	1	0	1	0	0
13	0	0	1	1	1	1	0	0	1	1	1
14	0	0	1	1	1	1	0	0	1	1	1

	when $N_{pilot} = 7$							when $N_{pilot} = 8$							
Bit #	0	1	2	3	4	5	6	0	1	2	3	4	5	6	7
Slot #0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0
1	1	0	0	1	1	0	1	1	0	1	0	1	1	1	0
2	1	0	1	1	0	1	1	1	0	1	1	1	0	1	1
3	1	0	0	1	0	0	1	1	0	1	0	1	0	1	0
4	1	1	0	1	0	1	1	1	1	1	0	1	0	1	1
5	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0
6	1	1	1	1	0	0	1	1	1	1	1	1	0	1	0
7	1	1	0	1	0	0	1	1	1	1	0	1	0	1	0
8	1	0	1	1	1	0	1	1	0	1	1	1	1	1	0
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1	0	1	1	0	1	1	1	0	1	1	1	0	1	1
11	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1
12	1	1	0	1	0	0	1	1	1	1	0	1	0	1	0
13	1	0	0	1	1	1	1	1	0	1	0	1	1	1	1
14	1	0	0	1	1	1	1	1	0	1	0	1	1	1	1

[wherein shaded pilot bit patterns allow at least one of channel estimation and frame synchronization.]

36.   (Amended) A frame structure for a Random Access Channel (RACH) in a communication system, wherein the improvement comprises each frame of the RACH having 15 slots and N_{pilot} number of pilot bits in each slot, where $N_{pilot}=8$, and pilot bit patterns comprise:

Bit #	$N_{pilot} = 8$							
	0	1	2	3	4	5	6	7
Slot #0	1	1	1	1	1	1	1	0
1	1	0	1	0	1	1	1	0
2	1	0	1	1	1	0	1	1
3	1	0	1	0	1	0	1	0
4	1	1	1	0	1	0	1	1
5	1	1	1	1	1	1	1	0
6	1	1	1	1	1	0	1	0
7	1	1	1	0	1	0	1	0
8	1	0	1	1	1	1	1	0
9	1	1	1	1	1	1	1	1
10	1	0	1	1	1	0	1	1
11	1	1	1	0	1	1	1	1
12	1	1	1	0	1	0	1	0
13	1	0	1	0	1	1	1	1
14	1	0	1	0	1	1	1	1

[wherein shaded pilot bit patterns allow at least one of channel estimation and frame synchronization.]

37. (Amended) A frame structure for a downlink Dedicated Physical Control Channel (DPCCH) in a communication system, wherein the improvement comprises each frame of the downlink DPCCH having 15 slots and N_{pilot} number of pilot bits in each slot, where $2 \leq N_{pilot} \leq 16$, and pilot bit patterns comprise at least one of the following based on N_{pilot} number of pilot bits:

	when N_{pilot} = 2	when N_{pilot} = 4		when N_{pilot} = 8				when N_{pilot} = 16							
Symbol #	0	0	1	0	1	2	3	0	1	2	3	4	5	6	7
Slot #0	11	11	11	11	11	11	10	11	11	11	10	11	11	11	10
1	00	11	00	11	00	11	10	11	00	11	10	11	11	11	00
2	01	11	01	11	01	11	01	11	01	11	01	11	10	11	00
3	00	11	00	11	00	11	00	11	00	11	00	11	01	11	10
4	10	11	10	11	10	11	01	11	10	11	01	11	11	11	11
5	11	11	11	11	11	11	10	11	11	11	10	11	01	11	01
6	11	11	11	11	11	11	00	11	11	11	00	11	10	11	11
7	10	11	10	11	10	11	00	11	10	11	00	11	10	11	00
8	01	11	01	11	01	11	10	11	01	11	10	11	00	11	11
9	11	11	11	11	11	11	11	11	11	11	11	11	00	11	11
10	01	11	01	11	01	11	01	11	01	11	01	11	11	11	10
11	10	11	10	11	10	11	11	11	10	11	11	11	00	11	10
12	10	11	10	11	10	11	00	11	10	11	00	11	01	11	01
13	00	11	00	11	00	11	11	11	00	11	11	11	00	11	00
14	00	11	00	11	00	11	11	11	00	11	11	11	10	11	01

[wherein shaded pilot bit patterns allow at least one of channel estimation and frame synchronization.]

38. (Amended) A frame structure for a downlink Dedicated Physical Control Channel (DPCCH) using Space Time Transmit Diversity (STTD) encoding in a communication system, wherein the improvement comprises each frame of the downlink DPCCH having 15 slots and N_{pilot} number of pilot bits in each slot, where $2 \leq N_{pilot} \leq 16$, and pilot bit patterns comprise at least one of the following based on N_{pilot} number of pilot bits:

	when N_{pilot} = 4		when N_{pilot} = 8				when N_{pilot} = 16							
Symbol #	0	1	0	1	2	3	0	1	2	3	4	5	6	7
Slot #0	01	10	11	00	00	10	11	00	00	10	11	00	00	10
1	10	10	11	00	00	01	11	00	00	01	11	10	00	10
2	11	10	11	11	00	00	11	11	00	00	11	10	00	11
3	10	10	11	10	00	01	11	10	00	01	11	00	00	00
4	00	10	11	11	00	11	11	11	00	11	11	01	00	10
5	01	10	11	00	00	10	11	00	00	10	11	11	00	00
6	01	10	11	10	00	10	11	10	00	10	11	01	00	11
7	00	10	11	10	00	11	11	10	00	11	11	10	00	11
8	11	10	11	00	00	00	11	00	00	00	11	01	00	01
9	01	10	11	01	00	10	11	01	00	10	11	01	00	01
10	11	10	11	11	00	00	11	11	00	00	11	00	00	10
11	00	10	11	01	00	11	11	01	00	11	11	00	00	01
12	00	10	11	10	00	11	11	10	00	11	11	11	00	00
13	10	10	11	01	00	01	11	01	00	01	11	10	00	01
14	10	10	11	01	00	01	11	01	00	01	11	11	00	11

[wherein shaded pilot bit patterns allow at least one channel estimation and frame synchronization.]

39. (Amended) A frame structure for a Secondary Common Control Physical Channel (S-CCPCH) in a communication system, wherein the improvement comprises each frame of the S-CCPCH having 15 slots and N_{pilot} number of pilot bits in each slot, where $8 \leq N_{pilot} \leq 16$, and pilot bit patterns comprise at least one of the following based on N_{pilot} number of pilot bits:

Symbol #	when $N_{pilot} = 8$				when $N_{pilot} = 16$							
	0	1	2	3	0	1	2	3	4	5	6	7
Slot #0	11	11	11	10	11	11	11	10	11	11	11	10
1	11	00	11	10	11	00	11	10	11	11	11	00
2	11	01	11	01	11	01	11	01	11	10	11	00
3	11	00	11	00	11	00	11	00	11	01	11	10
4	11	10	11	01	11	10	11	01	11	11	11	11
5	11	11	11	10	11	11	11	10	11	01	11	01
6	11	11	11	00	11	11	11	00	11	10	11	11
7	11	10	11	00	11	10	11	00	11	10	11	00
8	11	01	11	10	11	01	11	10	11	00	11	11
9	11	11	11	11	11	11	11	11	11	00	11	11
10	11	01	11	01	11	01	11	01	11	11	11	10
11	11	10	11	11	11	10	11	11	11	00	11	10
12	11	10	11	00	11	10	11	00	11	01	11	01
13	11	00	11	11	11	00	11	11	11	00	11	00
14	11	00	11	11	11	00	11	11	11	10	11	01

[wherein shaded pilot bit patterns allow at least one channel estimation and frame synchronization.]

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40. (Amended) A frame structure for a Secondary Common Control Physical Channel (S-CCPCH) using Space Time Transmit Diversity (STTD) encoding in a communication system, wherein the improvement comprises each frame of the S-CCPCH having 15 slots and N_{pilot} number of pilot bits in each slot, where $8 \leq N_{pilot} \leq 16$, and pilot bit patterns comprise at least one of the following based on N_{pilot} number of pilot bits:

Symbol #	$N_{pilot} = 8$				$N_{pilot} = 16$							
	0	1	2	3	0	1	2	3	4	5	6	7
Slot #0	11	00	00	10	11	00	00	10	11	00	00	10
1	11	00	00	01	11	00	00	01	11	10	00	10
2	11	11	00	00	11	11	00	00	11	10	00	11
3	11	10	00	01	11	10	00	01	11	00	00	00
4	11	11	00	11	11	11	00	11	11	01	00	10
5	11	00	00	10	11	00	00	10	11	11	00	00
6	11	10	00	10	11	10	00	10	11	01	00	11
7	11	10	00	11	11	10	00	11	11	10	00	11
8	11	00	00	00	11	00	00	00	11	01	00	01
9	11	01	00	10	11	01	00	10	11	01	00	01
10	11	11	00	00	11	11	00	00	11	00	00	10
11	11	01	00	11	11	01	00	11	11	00	00	01
12	11	10	00	11	11	10	00	11	11	11	00	00
13	11	01	00	01	11	01	00	01	11	10	00	01
14	11	01	00	01	11	01	00	01	11	11	00	11

[wherein shaded pilot bit patterns allow at least one channel estimation and frame synchronization.]